THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte CASIMER M. DECUSATIS
and
LAWRENCE JACOBOWITZ

_____

Appeal No. 1998-2508
Application 08/626,299[1]

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ON BRIEF

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Before THOMAS, FLEMING and DIXON, ***Administrative Patent Judges***.

FLEMING, ***Administrative Patent Judge***.

DECISION ON APPEAL

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[1] Application for patent filed April 1, 1996.

This is a decision on appeal from the final rejection of claims 1 through 6, all of the claims pending in this present application.

The invention is generally directed to a system for focusing laser light on a selected layer in a single-layered or multilayer optical disk information storage system. In particular, the present invention is directed to a system in which a light source is electromagnetically dithered to produce an electrical signal which is distinctive in terms of its ability to provide an indication of the position of a focused spot relative to a track that is being read or written.

In particular, Appellants disclose on page 10 of the specification that fig. 2 illustrates an apparatus which is employed to test the principles of the present invention. Appellants disclose that function generator 60 provides a dithering signal $I = I_0 \sin S_D t$. At the same time, the laser optics setup which includes photodetector 40, diode injection laser 10, beam collimating crossed fiber 80 and lens 100 results in a production of a signal S. Appellants disclose that signal S can be represented as a Fourier series with a DC

component a_0 plus other sinusoidal and cosinusoidal components in accordance with the equation disclosed on page 10 of Appellants' specifica- tion, line 16. Appellants disclose that the output from the photodetector 40 is proportional to the vector cross product of

signals I and S. Appellants disclose that if this product is

integrated over the period of the dithering signal, the result is shown in equation 2 disclosed on page 10, line 21, of Appellants' specification.

Appellants disclose that because of the orthogonality relationships expressed in the equation shown on the top of page 11 of Appellants' specification, it is seen that the resultant output R is proportional to the magnitude of coefficient a_1. Appellants disclose that this magnitude represents the distance from the focal plane to the desired position. Appellants disclose that this is an important property because it provides a feedback control mechanism for precisely aligning the lens.

Independent claim 1 is reproduced as follows:

1. A method for providing an electrical signal proportional to an amount by which a laser light source is to be moved relative to a track on a rotating information storage medium wherein the reflectivity of said storage medium in the region between tracks is different than the reflectivity along said tracks, said method comprising the steps of:

moving said light source in an oscillatory fashion in a direction which crosses said track;

converging light, from said light source, which has been reflected from said disk, into an electrical signal; and

integrating said electrical signal over time for at least one period for said oscillatory motion.

The reference relied on by the Examiner is as follows:

Kimura	4,531,206	July 23, 1985

Claims 1 through 6 stand rejected under 35 U.S.C. § 102 as being anticipated by Kimura.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the briefs[2] and the answer for the details thereof.

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[2] Appellants filed an appeal brief on August 8, 1997. The Examiner responded with a communication pointing out the defects in this brief. Appellants, in response, filed a corrected brief on November 12, 1997. We will refer to this corrected brief as simply the brief. Appellants filed a reply brief on March 3, 1998. The Examiner mailed a communication on March 16, 1998 stating that the reply brief has been entered and considered.

OPINION

After a careful review of the evidence before us, we do not agree with the Examiner that claims 1 through 6 are anticipated by Kimura.

It is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim. ***See In re King***, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986) and ***Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.***, 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984).

On page 5 of the brief, Appellants point out that Appellants' claim 1 specifically recites converting light from a laser light source which has been reflected from the storage medium into an electrical signal and integrating that electrical signal over a period of time which is equal to at least one period of the recited oscillatory motion.

Appellants argue that this aspect is nowhere present or even suggested by Kimura.

The Examiner argues on page 3 of the answer that Kimura teaches converting the light into an electrical signal and integrating the electrical signal for at least one period for the oscillatory motion by element 23 shown in figure 5. The Examiner further argues that Appellants' claim 1 does not require integrating an electrical signal immediately produced by converting the reflected light and an integrator which is continuously operable.

As pointed out by our reviewing court, we must first determine the scope of the claim. "[T]he name of the game is the claim." ***In re Hiniker Co.***, 150 F.3d 1362, 1369, 47 USPQ2d 1523, 1529 (Fed. Cir. 1998).

Turning to Appellants' claim 1, we note that the claim recites "converting light . . . into an electrical signal; and integrating said electrical signal over time for at least one

period for said oscillatory motion." From this language, in light of the specification, we find that Appellants' claim 1 requires integrating the same electrical signal that is produced by the step of converting light into an electrical signal.

Turning to Kimura, we find that Kimura teaches converting light into an electrical signal by elements 11 and 12 shown in figure 1. See column 3, lines 14 through 19. Kimura further discloses that the electrical signal is supplied to an envelope detector 13 to produce an amplitude modulated component due to the positional modulation of the beam spot. The detected amplitude modulated component is then supplied to a sample and hold circuit 15 via a band pass filter 14 for transmitting a part of the positional modulated signal component having a given frequency. See column 3, lines 19 through 25. Kimura further discloses that figures 2A, 2B and 2C show how to modulate the beam spot position with respect to the information track. In particular, figure 2A illustrates an ideal tracking condition in which a center of the light spot 1a is vibrated symmetrically on both sides of a center of

the track 5a. In this case, the amplitude modulated component in the envelope signal detected by the envelope detector 13 has a frequency which is equal to twice

of the wobbling frequency as shown in figure 3A. See column 3, lines 39 through 47. Kimura further discloses that figures 2B and 2C illustrate out-of tracking conditions in which the center of the beam spot 1a is shifted in the radial direction outwardly and inwardly, respectively. The amplitude modulated signals having a frequency equal to the wobbling frequency and an amplitude proportional to the deviation is shown in figures 3B and 3C. See column 3, lines 48 through 56. Appellants disclose that the band pass filter 14 is provided for selecting the amplitude modulated component having the wobbling frequency and therefore, in the ideal tracking condition shown in Fig. 2A, the amplitude modulated component is not transmitted through the filter. See column 3, lines 57 through 62.

Kimura further discloses by referring to fig. 1 that the amplitude modulated signal from the band pass filter 14 is

supplied to a zero cross detector 19 and to a level sensor 20. See column 4, lines 39 through 41. Kimura further discloses that the zero cross detector 19 produces a zero cross signal shown in fig. 4E and a sawtooth signal generator 21 is triggered at a raising edge of the zero cross signal to produce a sawtooth signal illustrated in fig. 4F. See column 4, lines 42 through 46. Kimura further discloses that the sawtooth voltage signal is

applied to a phase comparator 22 such that the instantaneous value of the sawtooth voltage signal is sampled and held and then stored in a voltage memory circuit 23. See column 4, lines 46 through 57.

Kimura further emphasizes that fig. 5 shows the embodiment of the voltage memory circuit 23. See column 5, lines 14 through 31. Kimura discloses that switch 23-1 is actuated by an output signal from level sensor 20 and the integrating circuit consists of resistor 23-2 and a capacitor 23-3. The level sensor 20 compares the output signal from the band pass filter 14 with a given standard level and the

switch 23-1 is turned on when the output from the band pass filter 14 exceeds the standard level. During the time that the switch 23-1 is turned on, the voltage sampled by the phase comparator 22 is stored in the integrating circuit; whereas, when the output of the band pass filter is lower than the standard level, in other words in the ideal tracking condition, the switch 23-1 is turned off and the voltage which has been just stored in the capaci- tance 23-3 is applied to the subtractor 24. Kimura discloses that in this manner, the feedback loop is made operative only when the tracking error is produced and thus the tracking control can be effectively stabilized.

From these teachings of Kimura, we fail to find that Kimura teaches converting light from a laser light source which has been reflected from the storage medium into an electrical signal and integrating ***that electrical signal*** over a period of time which is equal to at least one period of the recited oscillating motion. Kimura, on the other hand, teaches that voltage memory 23 integrates a sawtooth signal that is sampled at a particular time and does not teach

integrating the electrical signal which is produced at the output of amplifier 12. Therefore, we fail to find that Kimura teaches all the limitations as recited in Appellants' claims 1 through 6.

In view of the foregoing, the decision of the Examiner rejecting claims 1 through 6 is reversed.

REVERSED

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Administrative Patent Judge)
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) BOARD OF PATENT
MICHAEL R. FLEMING) APPEALS AND
Administrative Patent Judge) INTERFERENCES
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